

AMENDMENTS TO THE CLAIMS:

Claims 1-75 are canceled without prejudice or disclaimer. Claims 76-117 are added. The following is the status of the claims of the above-captioned application, as amended.

Claims 1-75 (Canceled.)

76. (New.) A method for producing ethanol from starch, comprising:

a) treating starch with an alpha-amylase, wherein the alpha-amylase is selected from the group consisting of:

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:1 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:1;

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:2 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:2;

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:3 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 178, 179, 180, 181, 182 and 183 in SEQ ID NO:3; and

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:7 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:7; and

b) preparing ethanol from the treated starch.

77. (New.) A method for producing ethanol from starch, comprising:

a) treating starch with an alpha-amylase, wherein the alpha-amylase comprises an amino acid sequence having at least 80% homology to SEQ ID NO:1 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:1; and

b) preparing ethanol from the treated starch.

78. (New.) The method of claim 77, wherein the alpha amylase comprises a deletion of three amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:1.

79. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 182 in SEQ ID NO. 1.

80. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 183 and 184 in SEQ ID NO. 1.

81. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 183 in SEQ ID NO. 1.

82. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 183 in SEQ ID NO. 1.

83. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 184 in SEQ ID NO. 1.

84. (New.) The method of claim 77, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 184 in SEQ ID NO. 1.

85. (New.) The method of claim 77, wherein the alpha-amylase comprises an amino acid sequence having at least 85% homology to SEQ ID NO:1.

86. (New.) The method of claim 77, wherein the alpha-amylase comprises an amino acid sequence having at least 90% homology to SEQ ID NO:1.

87. (New.) A method for producing ethanol from starch, comprising:

a) treating starch with an alpha-amylase, wherein the alpha-amylase comprises an amino acid sequence having at least 80% homology to SEQ ID NO:2 and which alpha-amylase

is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:2; and

b) preparing ethanol from the treated starch.

88. (New.) The method of claim 87, wherein the alpha amylase comprises a deletion of three amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:2.

89. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 182 in SEQ ID NO. 2.

90. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 183 and 184 in SEQ ID NO. 2.

91. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 183 in SEQ ID NO. 2.

92. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 183 in SEQ ID NO. 2.

93. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 184 in SEQ ID NO. 2.

94. (New.) The method of claim 87, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 184 in SEQ ID NO. 2.

95. (New.) The method of claim 87, wherein the alpha-amylase comprising an amino acid sequence having at least 85% homology to SEQ ID NO:2.

96. (New.) The method of claim 87, wherein the alpha-amylase comprising an amino acid sequence having at least 90% homology to SEQ ID NO:2.

97. (New.) A method for producing ethanol from starch, comprising:

a) treating starch with an alpha-amylase, wherein the alpha-amylase comprises an amino acid sequence having at least 80% homology to SEQ ID NO:3 and which alpha-amylase is modified by having an amino acid deletion of two amino acids selected from the group of amino acids equivalent to positions 178, 179, 180, 181, 182 and 183 in SEQ ID NO:3; and

b) preparing ethanol from the treated starch.

98. (New.) The method of claim 97, wherein the alpha amylase comprises a deletion of three amino acids selected from the group of amino acids equivalent to positions 178, 179, 180, 181, 182 and 183 in SEQ ID NO:3.

99. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 179 and 180 in SEQ ID NO. 3.

100. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 182 in SEQ ID NO. 3.

101. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 179 and 181 in SEQ ID NO. 3.

102. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 180 and 181 in SEQ ID NO. 3.

103. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 180 and 182 in SEQ ID NO. 3.

104. (New.) The method of claim 97, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 179 and 182 in SEQ ID NO. 3.

105. (New.) The method of claim 97, wherein the alpha-amylase comprises an amino acid sequence having at least 85% homology to SEQ ID NO:3.

106. (New.) The method of claim 97, wherein the alpha-amylase comprises an amino acid sequence having at least 90% homology to SEQ ID NO:3.

107. (New.) A method for producing ethanol from starch, comprising:

- a) treating starch with an alpha-amylase, wherein the alpha-amylase comprises an amino acid sequence having at least 80% homology to SEQ ID NO:7 and which alpha-amylase is modified by having a deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:7; and
- b) preparing ethanol from the treated starch.

108. (New.) The method of claim 107, wherein the alpha amylase comprises a deletion of three amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:7.

109. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 182 in SEQ ID NO. 7.

110. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 183 and 184 in SEQ ID NO. 7.

111. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 183 in SEQ ID NO. 7.

112. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 183 in SEQ ID NO. 7.

113. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 182 and 184 in SEQ ID NO. 7.

114. (New.) The method of claim 107, wherein the alpha-amylase comprises a deletion at positions equivalent to positions 181 and 184 in SEQ ID NO. 7.

115. (New.) The method of claim 107, wherein the alpha-amylase comprises an amino acid sequence having at least 85% homology to SEQ ID NO:7.

116. (New.) The method of claim 107, wherein the alpha-amylase comprises an amino acid sequence having at least 90% homology to SEQ ID NO:7.

117. (New.) A method for producing a sweetener from starch, comprising:

a) treating starch with an alpha-amylase, wherein the alpha-amylase is selected from the group consisting of:

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:1 and which alpha-amylase is modified by having a deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:1;

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:2 and which alpha-amylase is modified by having a deletion of two amino acids selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:2;

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:3 and which alpha-amylase is modified by having a deletion of two amino acids selected from the group of amino acids equivalent to positions 178, 179, 180, 181, 182 and 183 in SEQ ID NO:3; and

an alpha-amylase comprising an amino acid sequence having at least 80% homology to SEQ ID NO:7 and which alpha-amylase is modified by having a deletion of two amino acids selected of an amino acid selected from the group of amino acids equivalent to positions 180, 181, 182, 183, 184 and 185 in SEQ ID NO:7; and

b) preparing the sweetener from the treated starch.